

CLAIMS:

1. A method of reactivating a catalyst for methacrylic acid production, characterized by treating a catalyst for use in methacrylic acid production by vapor-phase oxidation of methacrolein or vapor-phase oxidative dehydrogenation of isobutyric acid, which catalyst containing P and Mo and exhibiting reduced activity, with a gas containing a nitrogen-containing heterocyclic compound.
2. A method of reactivating a catalyst for methacrylic acid production, characterized by treating a catalyst for use in methacrylic acid production by vapor-phase oxidation of methacrolein or vapor-phase oxidative dehydrogenation of isobutyric acid, which catalyst containing P and Mo and exhibiting reduced activity, with a gas containing a nitrogen-containing heterocyclic compound and steam; or with a gas containing a nitrogen-containing heterocyclic compound and a steam-containing gas.
3. A reactivation method according to Claim 1 or 2, in which the nitrogen-containing heterocyclic compound is at least one compound selected from pyridine, piperidine, piperazine, quinoline and derivatives of these compounds.
4. A reactivation method according to Claim 1, 2 or 3, in which the reactivation treatment is conducted within the reaction tubes.
5. A process for producing methacrylic acid through catalytic vapor-phase oxidation of methacrolein or catalytic vapor-phase oxidative dehydrogenation of isobutyric acid, characterized by using a catalyst which has been reactivated by the method as defined in any one of Claims 1-4.
6. A method according to any one of Claims 1-4, in which the catalyst exhibiting reduced activity has been deteriorated in consequence of exposure to high temperatures for many hours because of temperature control failure during the reaction.

7. A method according to any one of Claims 1-4, in which the catalyst exhibiting reduced activity has been deteriorated in consequence of many hours' use in the reaction under suspended oxygen or methacrolein supply.
8. A method according to any one of Claims 1-4, in which the catalyst exhibiting reduced activity has been deteriorated in consequence of exposure to high temperatures resulted from temperature control failure during the calcination step in the course of the catalyst preparation.
9. A method according to any one of Claims 1-4, in which the catalyst exhibiting reduced activity is one which has been gradually deteriorated during a long-term continuous reaction operation.
10. A method according to any one of Claims 1-4, in which the catalyst exhibiting reduced activity has been deteriorated in consequence of a high temperature oxidation treatment for removing polymers deposited on the catalyst surface.